METHOD OF FORMING AN NMOS TRANSISTOR AND STRUCTURE THEREOF

Abstract of the Disclosure

In one embodiment, metal boride (MB_x), metal carbide (MC_x), metal carbo-nitrides (MC_xN_y), metal boro-carbide (MB_xC_y), metal boro-nitride (MB_xN_y) or metal boro-carbo-nitride ($MB_xC_yN_z$), wherein the metal is a transition metal (Group III-XII of the periodic chart) may be suitable as NMOS gate electrode materials. Such materials, such as TaC and LaB_6, can be formed to have work functions that are within approximately 4 - 4.3 eV, which is desirable for NMOS transistors. In addition, the amount of carbon or nitrogen can be adjusting the amount of carbon or nitrogen in the precursor to achieve a predetermined metal work function.